What is claimed is:

1. A shut-off system for the avoidance of an overspeed condition in the event of a respective shaft failure, comprising:

a coaxial reference shaft connectable to an energy-consuming end of the respective shaft;

a signal trip element attached to the reference shaft and being axially and rotatably located on an energy-generating end of the respective shaft;

at least one loading item exerting an axial force on the signal trip element;

at least one driver pin protruding radially from a periphery of the signal trip element;

at least one latch engageable with the at least one driver pin to hold the signal trip element in a releasable locking position; and

at least one laterally facing rotary driver attached to the energy-generating end of the respective shaft which, upon a failure of the respective shaft and a corresponding relative rotation of the reference shaft to the respective shaft, rotatably engages the at least one driver pin to disengage the at least one driver pin from the at least one latch and release the signal trip element from the locking position to enable the signal trip element to move axially towards at least one of a sensor or an electric switching element arranged axially opposite of the signal trip element to generate a signal to an electronic control to interrupt an energy supply to the respective shaft.

2. A shut-off system in accordance with Claim 1, wherein the signal trip element comprises:

a piston rod;

a piston plate attached to the piston rod, with the at least one driver pin attached to a periphery of the piston plate;

a stop attached to the piston rod for limiting its axial travel;

a housing axially attached to the reference shaft and engageable with the piston rod to guide the piston rod,

a locating sleeve in which the housing is located, the locating sleeve including the least one rotary driver on its inner circumference, and

at least one locating bush for positioning the at least one loading item.

3. A shut-off system in accordance with Claim 2, wherein the at least one loading item is at least one of a pressure spring and a gas pressure element.

4. A shut-off system in accordance with Claim 2, wherein the stop is a stop bolt.

5. A shut-off device in accordance with Claim 1, wherein the sensor is from the group of inductive, capacitive and ultrasonic sensors.

6. A shut-off system in accordance with Claim 5, and further comprising:

a mounting plate attachable to a turbine exit casing; and

a sensor pad mounted to the mounting plate, the sensor mounted to the sensor pad.

7. A shut-off system in accordance with Claim 5, wherein the axial movement of the piston plate ends at a certain distance from the sensor.

8. A shut-off device in accordance with Claim 1, wherein the sensor comprises an optical sensor in the form of an optical transmitter and receiver; the transmitter and receiver being positioned remote and opposite of each other on a mounting plate of a turbine casing, with the axial travel of the signal trip element upon failure of the respective shaft interrupting a light beam produced by the optical transmitter to signal the electronic controller.

9. A shut-off system in accordance with Claim 1, wherein the electric switching element comprises:

a switch housing mounted on a mounting plate of a turbine casing;

a switch; and

a switching cylinder positioned in the switch housing and axially moveable therein upon contact with the axially moving signal trip element, the switching cylinder engageable with the switch, the axial movement of the switching cylinder engaging the switch to one of open and close an electric circuit to signal the electronic control.

10. A shut-off system in accordance with Claim 9, and further comprising:

a spring-loaded locating element arranged in the switch housing which is engageable with forward and rearward locating grooves positioned on a periphery of the switching cylinder to retain the switching cylinder in a respective switching state;

an insulator and an electrical conductor whose surfaces are generally flush with each other provided on the switching cylinder and movable with the switching cylinder;

the switch including two spring-loaded contact pins arranged axially one behind the other, the contact pins kept electrically isolated from one another by the insulator until axial movement of the switching cylinder engages the electrical conductor between the two contact pins to electrically connect the two contact pins to produce the signal to the electronic control.

11. A shut-off system in accordance with Claim 1, wherein the respective shaft is a shaft of an engine, the system further comprising the electronic control; the at least one of the sensor and the electric switching element being connected via a connecting line to the electronic control, the electronic control connected to a power supply to a fuel shut-off valve to shut off a fuel supply to the engine upon failure of the respective shaft.

12. A shut-off device in accordance with Claim 2, wherein the sensor comprises an optical sensor in the form of an optical transmitter and receiver; the transmitter and receiver being positioned remote and opposite of each other on a mounting plate of a turbine casing, with the axial travel of the signal trip element upon failure of the respective shaft interrupting a light beam produced by the optical transmitter to signal the electronic controller.

13. A shut-off system in accordance with Claim 2, wherein the electric switching element comprises:

a switch housing mounted on a mounting plate of a turbine casing;

a switch; and

a switching cylinder positioned in the switch housing and axially moveable therein upon contact with the axially moving signal trip element, the switching cylinder engageable with the switch, the axial movement of the switching cylinder engaging the switch to one of open and close an electric circuit to signal the electronic control.

14. A shut-off system in accordance with Claim 13, and further comprising:

a spring-loaded locating element arranged in the switch housing which is engageable with forward and rearward locating grooves positioned on a periphery of the switching cylinder to retain the switching cylinder in a respective switching state;

an insulator and an electrical conductor whose surfaces are generally flush with each other provided on the switching cylinder and movable with the switching cylinder; and

the switch including two spring-loaded contact pins arranged axially one behind the other, the contact pins kept electrically isolated from one another by the insulator until axial movement of the switching cylinder engages the electrical conductor between the two contact pins to electrically connect the two contact pins to produce the signal to the electronic control.

15. A shut-off system in accordance with Claim 14, wherein the respective shaft is a shaft of an engine, the system further comprising the electronic control; the at least one of the sensor and the electric switching element being connected via a connecting line to the electronic control, the electronic control connected to a power supply to a fuel shut-off valve to shut off a fuel supply to the engine upon failure of the respective shaft.

16. A shut-off system in accordance with Claim 2, wherein the respective shaft is a shaft of an engine, the system further comprising the electronic control; the at least one of the sensor and the electric switching element being connected via a connecting line to the electronic control, the electronic control connected to a power supply to a fuel shut-off valve to shut off a fuel supply to the engine upon failure of the respective shaft.

17. A shut-off system in accordance with Claim 1, wherein the at least one loading item is at least one of a pressure spring or a gas pressure element.

18. A shut-off system in accordance with Claim 1, wherein the stop is a stop bolt.

19. A shut-off device in accordance with Claim 2, wherein the sensor is from the group of inductive, capacitive and ultrasonic sensors.

20. A shut-off device in accordance with Claim 14, wherein the sensor is from the group of inductive, capacitive and ultrasonic sensors.